



STATE OF MONTANA JOB PROFILE AND EVALUATION

The job profile is a streamlined position description and may serve as the core document for all human resource functions such as recruitment, selection, performance management and career and succession planning. It was developed, initially, for use in classifying positions in Pay Plan 020.

If you are converting a position to Pay Plan 020 and the position has not changed simply cut and paste the information needed from the current position description. The position description contains sections that are no longer used to classify the position, such as: Working Conditions and Physical Demands; Management and Supervision of Others; Supervision Received; Scope and Effect; and Personal Contacts. These may still be important to the position and may be included in **Section IV – Other Important Job Information**.

When working with a new position, classification request or change to a position in Pay Plan 020, complete the information below to provide the required documentation for classification.

SECTION I – Identification

Working Title Field Project Technician II		Job Code 173213	Job Code Title Civil Engineering Technician
Pay Band 3	Position Number 00000		Check ONE box : <input type="checkbox"/> FLSA Exempt <input checked="" type="checkbox"/> FLSA Non-Exempt
Department Transportation			Division and Bureau Engineering Division Butte District
Section and Unit Field Project Section			Work Address and Phone 3751 Wynne Butte, MT 59702 406-494-9600
Profile Produced By District Materials/Technician Committee Bob Fisher, Chair Brian Cameron Jim Kerins CMS, LLC			Work Phone 406-494-9600 406-442-4934

Work Unit Mission Statement or Functional Description - This section should include a complete statement of the mission or function as it relates to the work unit.

The Highways and Engineering Division prepares projects for bidding and coordinates highway construction. The division is made up of the Materials, Construction, Right-of-Way, Bridge, Engineering Oversight, Traffic, and Preconstruction Bureaus; the CADD Systems and Engineering Management Support Sections; and five District Construction Offices for budget and workforce purposes.

The District oversees highway and bridge construction from the time a construction contract is awarded to a private contractor until the project is completed and the work approved. This includes inspection, sampling, testing, and surveying site features and materials to ensure that roads and bridges are built or reconstructed to established standards. Field Project personnel are responsible for sampling and testing construction and site features and materials to provide information necessary to determine the scope of construction projects and materials needed; ensure compliance with State and federal standards and project specifications; maintain required documentation; and provide technical assistance to contractor, construction, and maintenance crews in the design, testing, and application of construction materials. The Section also includes District and Area Materials Laboratories that are responsible for supplying design, construction, and maintenance staff with necessary information on availability, quality, and quantity of materials used through site assessment, quality assurance, testing, and technical assistance services related to materials used in design, construction, and maintenance of the Montana's highways and bridges. District offices include Billings, Butte, Glendive, Great Falls, and Missoula.

Describe the Job's Overall Purpose:

This position serves as an experienced Field Project Technician within the District and is responsible for coordinating and conducting various inspection, sampling, and testing procedures to verify that construction project features and materials conform with standard specifications, Department requirements, and contract agreements. The position is also responsible for coordinating and conducting staking and surveying procedures and performing a variety of other duties as assigned. The position reports to the Field Project Technician III and provides guidance and technical assistance to less experienced Field Project Technicians performing routine inspections, sampling, testing, and surveying procedures.

SECTION II - Major Duties or Responsibilities	% of Time
<p>This section should be a clear concise statement of the position's duties. Well written thorough task/duty statements are required here to accurately evaluate the position.</p> <p>1. What are the major duties or responsibilities assigned to this position? What are the specific tasks involved in accomplishing those duties. Group duties in order of importance and estimate the percent of time needed to perform each duty (estimates are not required for individual tasks). NOTE: Because you are identifying major duties usually 3-5, the quantity of time probably will not be less than 20%. If a duty is essential but not performed routinely you should</p>	

list it. For example, lobbying during the legislative session may not take up a large percent of total work time, but can be an essential duty.

A. FIELD PROJECT ASSESSMENTS

70%

1. Recommends project priorities and equipment necessary for inspection, sampling, and testing of construction project features and materials. Provides routine technical assistance to less-experiences Field Project Technicians and recommends alternative inspection procedures necessary to complete assignments.
2. Recommends optimum placement, configuration, and calibration of field laboratory facilities and equipment. Coordinates blocking and leveling trailers, mounting and securing equipment, performing routine calibrations, posting traffic control signs, and ensuring compliance with prescribed configurations and safety regulations.
3. Inspects testing equipment to ensure operability and proper calibration according to defined testing methods and specifications. Recalibrates equipment, replaces serviceable parts, and performs routine equipment repairs as necessary to ensure the integrity of tests and measurements. Refers unusual or complex problems to Field Project Technician IIIs or more experienced technicians.
4. Coordinates and conducts inspections of guardrail, signing, compaction testing, electrical, concrete, chip seals, seeding, fencing, striping, and other project components to ensure that alignment, grades, sizes, slopes and other features are compliance with Department standards and contract requirements.
5. Coordinates and conducts inspections of backfill, embankments, and road surfaces to ensure that placement, materials, moisture content, lift depths, and compaction methods are in compliance with specifications.
6. Coordinates and conducts reviews of Materials Certificates provided by contractors to verify certification of materials delivered to project sites by comparing identifiers (e.g., milling stamps, etc.) with certifications. Determines and establishes appropriate sample collection methods and requirements based on types of materials, intended use, and standards and specifications.
7. Coordinates and conducts sample collection of construction project features and materials (or oversees sampling by contractors) according to specific types of features and materials, site conditions, and the most appropriate sampling methods, techniques, and equipment for each test. Determines appropriate adaptations to prescribed sampling methods, justifies additional sampling, and resolves contractor deficiencies through interpretation and application of standards and specifications.
8. Coordinates and oversees sample preparation for testing based on the type of material and prescribed procedures. This involves technical procedures such as preparing molds; pouring concrete cylinders; and weighing, washing, shaking,

crushing, and splitting samples. Examines physical characteristics of materials (e.g., height, width, volume, moisture, etc.) and modifies samples (e.g., extended dry time, reshaking, etc.) as necessary to ensure the integrity of tests. Ensures appropriate sampling, labeling, and transportation of samples to laboratories according to State and federal requirements.

9. Coordinates and conducts specialized tests on construction project features and materials to verify specifications and determine the general cause of deficiencies. This involves the application of detailed testing procedures related to sieve analysis, specific gravity, compaction, moisture, density, liquid limit, plastic limit, plasticity indices, slump of concrete, and other materials characteristics; determining whether deficient results are due to substandard features or materials, malfunctioning equipment, or operator error; and determining the need for further sampling, testing, and/or split sample analyses as appropriate.
10. Compiles, calculates, and summarizes test results; compares final results to specifications; and maintains records of testing procedures and results. This involves the application of conversion factors and tables, algebraic equations, noting deviations from standard specifications, and identifying deficient test results. Reviews and approves test results compiled by Field Project Technicians to ensure accuracy and compliance with standards and specifications.
11. Monitors contractor compliance with project plans and specifications and coordinates with contractors to identify and resolve deficiencies (e.g., improper materials or placements, inappropriate construction practices, safety concerns, etc.). Refers complex or contentious issues to Field Project Technician III for further action.
12. Ensures appropriate documentation of all aspects of construction inspection, sampling, testing, and surveying, including material quantities; project locations; explanations of changes; conversations with contractors and project communications; project personnel, equipment, and shifts; supervisory instructions; and other relevant project data.

B. STAKING AND SURVEYING

25%

1. Installs survey monuments by measuring distance, direction, and elevation from existing monuments and aerial surveys. This involves determining appropriate placement of monuments (e.g., rods, pickets, etc.) based on established reference points and topographic features. Reviews topographic, hydraulic, and other surveyed features provided by Field Project Technicians and assigns and records feature codes.
2. Reviews road plans to plan construction staking activities based upon site-specific intervals identified through assessment of design plans and terrain features. Provides ongoing guidance and direction to Field Project Technicians to ensure adherence to plans, resolve in-progress problems, and verify the

accuracy of staking.

3. Determines the exact location of highway centerlines, traverse points, property boundaries, and design features (e.g., horizontal and vertical curves, culverts, embankments, guardrails, etc.) by surveying distances and elevations from preconstruction survey references.
4. Coordinates and oversees chainmen and rodmen during survey activities to ensure efficient staking and surveying procedures; appropriate placement of holding pickets, pogo rods, tape, pins, and/or tacks; effective coordination with other survey project staff and contractors; and identification and resolution of problems
5. Determines the correct location of stakes to correlate design plans to site-specific terrain. Coordinates and oversees marking of stakes with letters and number codes to provide a description of the point (e.g., placement and slope of embankments, property corners and boundaries, hydraulic features, etc.), point name or number, distance from centerline, and other relevant data.

C. OTHER DUTIES

05%

This position performs a variety of other duties as assigned by supervisors. These include participating in meetings and training activities; compiling, recording, and maintaining data; confirming the accuracy of field survey notes, construction survey notes, pay quantities, and other data; coordinating and monitoring traffic control procedures; coordinating and overseeing special projects; and other duties as assigned. Field Project Technicians are also expected to assist with project management and coordination activities of the Field Project Technician III as directed.

1. Give specific examples of the types of problems solved, decisions made or procedures followed when performing the most frequent duties.

Problems and decisions typically involve recommending appropriate project priorities, personnel assignments, and equipment required to perform inspection, sampling, and testing procedures. The position also determines appropriate inspection, sampling, and testing methods and procedures based upon the type of material, specific site conditions, and testing equipment. As a Project Technician, the position is frequently required to adapt standards and specifications to site-specific features.

2. What do you consider the most complicated part of the job?

The most complicated aspects of the job are determining, applying, and adapting standards, specifications, and procedures to site-specific project features and materials. The position is also required to coordinate multiple tools, equipment, timelines, and requirements to ensure that project standards and specifications are met.

3. What laws, regulations, guidelines, manuals or other written established procedures are available to the incumbent?

Work parameters are largely defined by AASHTO, FHWA, and ASTM standards; project design and construction standards and specifications; Montana Materials Manual, Montana Construction Manual, and Standard Specifications for Road and Bridge Construction; and sampling and laboratory testing protocols. Administrative work is covered by State rules and statutes (e.g., MCA, MOM, ARM, etc.), Department policy and procedure manuals, and annual program plans. Most work is performed without routine guidance or oversight, although the Field Project Technician III may review project phases to verify the logic and integrity of decisions, procedures, and results.

4. Which of the duties and/or specific tasks listed under 1. (above) are considered “essential functions” which must be performed by this position (with or without accommodations)? (If you need information or training on the identification of essential functions, please contact MDT Human Resources Division.)

All duties are considered essential functions of the positions, except those noted in Section C: Other Duties.

6. If this position supervises other positions, complete the following information.

The number of FTE employees directly supervised is: **N/A.**

List the complexity levels/pay bands of each those subordinates: **N/A.**

Please list the Position Numbers for those directly supervised: **N/A.**

Is this position responsible for (please check ONLY those boxes which apply to the position and for which the position has “signatory” authority.)

- ☐ Hiring ☐ Layoffs/termination of temporary or seasonal workers
☐ Performance Management (conducting and signing performance appraisals as the direct supervisor or the reviewing manager) ☐ Promotions
☐ Direct /Line Supervision ☐ Leadworker ☐ Discipline
☐ Other: Participates in recruitment, selection, and performance appraisals.

7. Please attach an up-to-date Organizational Chart (or copy from a Power Point document into space below).

ATTACHED.

SECTION III - Minimum Qualifications - List the minimum requirements for first day of work. (These will be the minimum qualifications utilized for recruitment and performance management purposes; this information is not used for classification purposes.)

Please list the main knowledge and skill areas required for the job:

The position requires knowledge of project inspection and testing procedures, including site features and materials; general construction engineering principles; sampling and laboratory testing procedures; State, AASHTO, FHWA, and ASTM standards and specifications; and maintenance and calibration of specialized tools and equipment. The position also requires knowledge of surveying and highway construction methods and operations; project implementation and documentation techniques; project design and construction criteria and standards; properties and characteristics of materials components and the impacts of site specific circumstances (e.g., soils, temperature, weather conditions, gradations, segregation, stability, flows, additives, absorption rates, etc.); highway construction terminology; business English; and basic algebra, geometry, and trigonometry.

The position requires skill in reviewing, interpreting and applying design plans and specifications to site circumstances; acquiring and documenting field data; constructing sets of field notes; interpreting site conditions (e.g., elevations, features, etc.); and communicating effectively with contractors, landowners, and other Department personnel. The position also requires skill in operating specialized sampling and testing equipment (e.g., Gilson shaker, nuclear gauge, sieves, survey equipment, etc.) and office equipment used to calculate and record data (e.g., PCs, calculator, laptop computers, VAX system, etc.).

What behaviors are required to perform the duties? NOTE: Identifying behaviors used for recruitment and selection and other HR functions are part of building a competency model (see Creating Competency Models in Guide). A position description will provide helpful information if a model has not been developed. Often “abilities” from the current PD can be stated as desired and observable behaviors. For example, “the ability to communicate clearly in writing” can be restated “writes clearly and concisely.”

PENDING

Education and experience: Please indicate the minimum educational requirements for this job, as it relates to a new employee on the first day of work (not the educational background of the person now in the position), the specific fields of study that are acceptable, and whether a Master’s degree (in which fields) will substitute for any of the required job related experience.

The required Knowledge, Skills and Abilities are typically acquired through a combination of education and experience equivalent to a high school diploma, including coursework in algebra, geometry, or trigonometry.

Other training (e.g., software, specific machinery, etc.), certification (e.g., CPA, Professional Engineer, etc.), or licensing (e.g., commercial driver’s, pilot, psychologist, etc.) required (please specify):

The position must complete specialized training in safety procedures upon acceptance.

Please indicate the minimum amount of job-related work experience needed as a new employee on the first day of work (not the experience of the person now in the position). Please indicate the specific types of experience that will be considered job-related.

The position requires two (2) years of experience in highway construction or related field (e.g., laboratory testing, transportation design, engineering, etc.), including experience in inspection, sampling, testing, and/or surveying.

☐ **This agency will accept alternative methods of obtaining necessary qualifications.**

For recruiting purposes please list specific examples of acceptable alternative methods of obtaining those qualifications. These examples will appear on a vacancy announcement.

SECTION IV – Other Important Job Information

List any other important information associated with this position, such as working conditions or other factors which are deemed critical or non-negotiable to the position and which will need to be included on the vacancy announcement or other recruitment documents. (This information will be NOT be used for classification purposes.) For example: The position is required to travel throughout the state in excess of 12,000 miles per year and to perform duties on active construction sites in proximity to heavy equipment, hot asphalt, and high speed traffic, requiring use of hard hats and specialized safety training. OR, This position is not subject to alternative work schedules or working from home as it is required to answer the phone and receive visitors for the agency between the hours of 8am to 5pm, Monday through Friday.

Essential functions involve significant physical demands related to repeated lifting of up to 80 pounds (and occasionally greater weights); carrying survey equipment over rough terrain, climbing and bending to retrieve samples; and operating gas, diesel, and electrically powered equipment. The position involves extensive overnight travel throughout the District in excess of 2,000 miles per month (often on short notice, weekends, and holidays) and working outdoors in all types of weather.

The work environment involves harsh or caustic fumes, dust, extreme temperatures, wind, rain, and snow. Hazards associated with the work can be significant. The majority of the work is performed at construction sites or fabrication plants involving traffic passing the project site and working around heavy machinery such as front-end loaders, pavers, scrapers, rollers, and forklifts. The work also involves and risks associated with working with hazardous materials such as hot asphalt, lime, acids, and other chemicals. The risks of the work are such that extensive training in safety practices and procedures is required. Due to the nature of work elements (e.g., hot asphalt, heavy equipment, etc.) and hazardous tasks such as work around moving traffic and taking samples from hot plants, there is potential for significant personal injury.

SECTION V – Signatures

My signature below indicates the statements in Section I to IV are accurate and complete.

Employee:		
Signature	Title	Date
Immediate Supervisor:		
Signature	Title	Date
Name:		
Signature	Title	Date
Division/District Administrator:		
Signature	Title	Date
Departmental Designee:	Chief, Employee Relations Bureau, Human Resources Division	
Signature	Title	Date

Recruitment Review: My signature below attests to my review of and determination that the minimum qualifications (education and experience) listed in this profile meet the established recruitment standards of MDT.

Signature

Date:

Name:

Title: Human Resource Specialist (District/Helena)
Montana Department of Transportation

Upon completion of this section the preparer, district human resource specialist, or other signing authority should forward the signed hard copy and the electronic copy of this job profile (JP), along with an Agency Classification Request (ACR) and an up-to-date Organizational Chart (if not included in the body of the JP) to the Chief of the Employee Relations Bureau, Human Resources Division, MDT in Helena.

The electronic copy naming convention for JPs sent by the District or from Helena supervisors to Human Resources in Helena should be: (Position#)JP-MDT.doc (e.g., 34015JP-MDT.doc).

*******DO NOT FILL IN THIS PORTION*******

JOB EVALUATION FORM

This section is to be completed by a trained classifier in or contracted by the Human Resources Division, MDT or by State Personnel Division.

Prepared By Communication & Management Services

Date 3/23/04

Position Status: ☐ Reclassified ☐ Vacant ☒ New Position

Choice of Class Series: Civil Engineering Technician

Under the old DOT class code structure, this position would have been an Engineering Project Aide or Technician, however these titles were eliminated upon conversion to the SOC-based system. Crosswalks produced by SPD indicate that the old Engineering Project Tech classes were rolled into the new Civil Engineering Technician classes, so it is likely the most appropriate. SOC discussion of this class is "Apply theory and principles of civil engineering in planning, designing and overseeing construction and maintenance of structures and facilities under the direction of engineering staff or physical scientists."

Position Summary:

This position serves as an experienced Field Project Technician within the District and is responsible for coordinating and conducting various inspection, sampling, and testing procedures to verify that construction project features and materials conform with standard specifications, Department requirements, and contract agreements. The position is also responsible for coordinating and conducting staking and surveying procedures and performing a variety of other duties as assigned. The position reports to the Field Project Technician III and provides guidance and technical assistance to less experienced Field Project Technicians performing routine inspections, sampling, testing, and surveying procedures.

Benchmark Factoring

Classification Factor Level: 3

The predominant work of this position consists of: Field project assessments (70%) that involve recommending project priorities and equipment for inspection, sampling and testing of construction project features; recommending placement, configuration and calibration of field lab facilities and equipment; inspecting testing equipment; providing technical assistance and problem solving for lower level technicians; coordinating inspections of project components; coordinating sampling procedures and sample testing; monitoring and tracking contractor compliance and handling the more complex/complicated specialized testing, test result compilation and calculations. It also ensures appropriate documentation of all aspects of construction inspection, sampling, testing and surveying.

Factor level Comparison:

This work requires skilled application of methods and techniques associated with technical-level field aspects of construction project work and examination of multiple technical variables in order to recommend project priorities and equipment necessary to inspect, sample and test construction project features; to provide technical assistance to lower level field project techs in determining appropriate sampling procedures; and in recommending optimum placement, configuration and calibration of field lab facilities and equipment. The work also requires the selection of appropriate courses of action based on identification and examination of data such as in determining appropriate adaptations to prescribed sampling methods if they need to be modified based on specific site or project characteristics, and in justifying additional sampling needs for the project. Decisions are based on a combination of variables that are observable (e.g. determining improper materials or placement of materials, inappropriate or unsafe construction practices based on standards and requirements, etc.), and the modification of the structure of work elements or content of data (e.g. reviewing and approving test results compiled by lower level Field Project Techs, or making corrections to ensure compliance with project specifications, or ensuring appropriate and complete project documentation of all aspects of construction inspection, sampling, testing and other project/site components).

This work requires knowledge of standardized procedures (e.g. AASHTO, FHWA and ASTM standards, project design and construction standards and specifications, Montana Materials Manual, Montana Construction Manual and sampling and laboratory testing protocols, etc.) and the ability to determine courses of action based upon standardized rules and regulations to ensure sampling, testing and equipment integrity and documentation are appropriate. In addition to graduation from high school, this position requires 2 or more years of experience in highway construction or a related field involving inspection, sampling, testing, and/or surveying. Level 3 is appropriate.

Benchmark Comparisons:

Stronger than the benchmark 029508 Laboratory Technician, level 2. In the benchmark, the position prepares samples for testing, notifies supervisor of inconsistencies or inaccuracies, follows established procedures and guidelines/standards, conducts routine tests, maintains records, and performs mathematical computations for reporting. The subject position is stronger because it is assigned oversight and coordination responsibilities for lower level technicians, handles more complex situations and issues, recommends project priorities and sequencing, as well as optimum placement and configuration of lab facilities and equipment, and determines adaptations to prescribed sampling methods that may be necessary due to unique and individualized project sites, characteristics and specifications. The subject position is stronger than the benchmark on this factor.

More similar to the benchmark 899003 Maintenance Worker, level 3. Both positions require the ability to choose correct procedures from a variety of alternatives, involve adaptation or modification of approaches depending on specific situations and characteristics of the project or assignment, and require knowledge and skills associated with standardized rules and procedures applicable to technical level work (in the benchmark in skilled work repairing buildings, grounds and facilities at a state site in Lewistown, and in the subject position in skilled work associated with engineering technician support to highway construction projects at field sites). Overall, from a level perspective, these are good comparisons.

Kristin Jacobson	Consultant, CMS, LLC	3/24/05
Classifier Signature	Title	Date
Agency Approval:	Title	Date

Upon completion of this section the classifier should make certain that the Job Code Number, Job Code Title and Pay Band on the first page of this document accurately reflect the Choice of Class Series and classification factor level determined above. Attach Organizational Chart, Audit Notes or other pertinent information.

This completed document should now be filed by the classifier in:

I:\Classref\Agencyjp\agency#\filename).

File naming convention is: (jobcode&position#)jp(date).doc (e.g. 01850421001jp0201.doc, where date is: month year).